

CLEANLINESS, HEALTH, WEALTH.

Domestic Sanitation,

ONE OF ITS MOST IMPORTANT ELEMENTS

AS ELABORATED IN A REPORT

TO THE

New Orleans Medical and Surgical Association:

ACCEPTED BY THE

New Orleans Auxiliary Sanitary Association.

NEW ORLEANS:

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1879.

THE EVIL

AND

THE REMEDY

FOR THE

PRIVY SYSTEM OF NEW ORLEANS

Read carefully, consider well, and hand this to your neighbor

"It has been among the oldest and most universal of medical experiences that populations living amid filth, and within direct reach of its polluting influence, succumb to various diseases, which, under opposite conditions, are comparatively or absolutely unknown; and the broad knowledge that filth makes disease is amply represented in the oldest records which exist of legislation meant for masses of mankind. The exacter studies of modern times have further shown, that by various channels of indirect and clandestine influence, filth can operate far more subtly, and also far more widely and more destructively, than our forefathers conjectured. * * Of all the filth influences which prevail against human life in this country, privies of the accumulative sort operate undoubtedly to far the largest extent."—*Report to the Local Government Board on some recent inquiries under the Public Health Act of 1858, by Mr. John Simon, Medical Officer of the Council, and presented to both Houses of Parliament, by command of Her Majesty, London, 1874.*

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PREFACE.

Shortly after the organization of the New Orleans Auxiliary Sanitary Association, the New Orleans Medical and Surgical Association tendered its services in carrying forward the important work it had undertaken.

Drs. D. C. Holliday, A. R. Gourrier, and J. Dell'Orto, the committee appointed by the New Orleans Medical and Surgical Association, and the Sanitary Director of the New Orleans Sanitary Association, upon conference, deemed it highly important that the professional opinion of the society be obtained on various topics essentially connected with the permanent improvement of the health of New Orleans.

[EXTRACT FROM THE MINUTES.]

"Dr. Holliday, the chairman of the committee to confer with the Executive Committee of the New Orleans Auxiliary Association, made his report. Among the propositions was the following :

"Recognizing the vast importance of immediate improvement in our system of privies, and their proper disinfection and management, we advise a call for communications on these subjects from those most competent to furnish them in order to avail ourselves of those most economical and practical in their suggestions.

"J. M. WATKINS, M. D., Secretary."

Suggested by the foregoing proposition, a committee, consisting of Drs. Geo. K. Pratt, F. Loeber, and Joseph Holt, was appointed to consider and report upon the subject.

Their report, carefully discussed and accepted by the association, constitutes the present pamphlet, and is published by the New Orleans Auxiliary Sanitary Association for the information of its members, and citizens generally.

C. B. WHITE,

Sanitary Director.

THE EVIL, AND THE REMEDY FOR THE PRIVY SYSTEM OF NEW ORLEANS.

*To the President and Members of the New Orleans Medical and
Surgical Association :*

GENTLEMEN :—Your committee appointed to investigate the privy system of this city, to note its defects and the influence it exerts upon the health and comfort of this people, and if possible to discover a remedy possessing the qualities of assured efficiency without experimentation, of simplicity in detail and of economy, present the following report :

To remedy the present system of cess-vaults is at once the most important and the most difficult problem connected with the sanitation of New Orleans, and the one above all others which demands an immediate solution.

Even among sanitarians very few have comprehended the magnitude of this evil, compared with which all others combined are of minor significance. It is manifest that an accurate knowledge on this very point is the only basis upon which we can construct a plan for its removal.

We are compelled to approximate closely the facts relative to this pernicious system, to reduce to comprehensive figures its amount, to limit definitely its extent, in order to appreciate its true value as a leading factor in the discomfort of our daily existence, in the debasing influences depressing our poor, and the chief factor in rendering the condition of thousands disgustingly wretched ; in the lowering of the vital standard and energy of the whole population, by putrid contamination of the air we breathe, and often of the food and water we take ; in lessening and often breaking down the power of resistance to diseased action ; in originating directly a large class of maladies, known in sanitary science as "excremental" or "filth-diseases;" in the frightful percentage of children swept

from our homes by some of these diseases, called on their account "Herodian;" in the maintaining of a high annual death rate by the operation of causes strictly preventable; and finally as an essential factor in originating pestilences, or in offering as a rich field our city, inviting the introduction of an atom of the leaven of any deadly contagium.

The nature and extent of their influence understood, we discover that our privies are to pestilence as the grass of our prairies to fire. The spark may be introduced; *it can be generated.*

Having properly estimated the evil, we must offer a remedy, simple in detail and practical in application to the peculiar circumstances of our city.

In the following calculation, for convenience and accuracy, we have excluded the towns of Carrollton, Algiers and Gretna, and also the vacant squares in the rear of the districts.

We are indebted to Colonel T. S. Hardee, State Engineer, for the estimate of area kindly furnished by him.

Surveyed from a sanitary point, New Orleans—the city proper—presents a superficial area of 4860 acres. The built-up portion of the city is in length about six miles by the river, with an average width of one mile and a quarter.

Living within this space is a population of 190,000 people, occupying 26,500 habitations, or 7.17 of persons to each tenement or house.

To accommodate these people each habitation is provided with a privy vault, sunk in the ground, its contents having free access to the soil. Often this vault is so enlarged as to serve for two and sometimes for three tenements.

Fixing the amount of excreta, solid and fluid, at three pounds daily (the average per capita of entire population), we find that, upon and into the soil of these 4860 acres, crowded with human beings, is poured 570,000 pounds of their excrement every twenty-four hours, or 17,100,000 pounds in one month of thirty days, or 208,050,000 pounds in one year.

Placing the amount of matter removed by the vidangeurs at the maximum average of 15,000 gallons daily (a high estimate), each gallon weighing $10\frac{1}{2}$ pounds, we find the daily removal of 157,500 pounds; in one month of twenty-six working days,

4,095,000 pounds—or 49,297,500 pounds annually; leaving in this crowded city, to be disposed of by nature as best she can, the enormous amount of 158,752,500 pounds, the deposit of a single year.

Imagine this quantity of human excrement, undergoing slowly the lowest and most offensive form of putrefactive fermentation, and escaping from the sinks of 26,500 habitations, partly by overflow into yards, gutters and under the houses; partly by evaporation into the atmosphere, but chiefly by soakage into the earth, and from every direction poisoning the air; conceive of this fully, and the mind then closely approaches the truth, and is enabled for the first time to correctly value our privy system.

The condition of our people, particularly of the overcrowded poor is greatly to be pitied. Ignorant of the plainest principles of sanitary law, yet living under climatic conditions requiring the most rigid conformity as the price of health and comfort, tens of thousands of them are, as the inhabitants of Nineveh, "that cannot discern between their right hand and their left hand;" but of whom inexorable and un pitying nature has never said, "and should not I spare that great city?" Fortunately they are apt and can quickly learn, requiring only to be led the way by honest teaching and in truth. From the experience of those who have helped themselves out of a like condition to our own we must draw liberally for enlightenment.

A commission, composed of scientists of the highest rank, was appointed in 1874 to investigate the sanitary condition of the city of Boston. In their report the following statement is made: "The 'filth diseases' occasion each year the greater part of our preventable mortality. The diseases whose origin or transmission are manifestly dependent upon infection by filth are typhoid fever and certain forms of diarrhœal disease, the chief of these being cholera infantum. Certain other classes of diseases appear to owe in some measure their fatal type and their wide spread prevalence, if not occasionally their origin, to filth. We allude to scarlet fever, diphtheria, and perhaps cerebro-spinal meningitis, as well as certain exceptional forms of pneumonia. In the case of all these diseases a partial dependence upon filth infection has been suspected, if not actually demonstrated. Moreover it appears to be not unlikely that many other forms of fatal disease, whose origin and whose processes show absolutely no causal dependence upon filth,

may nevertheless find easier victims in those sufferers whose general health has been previously undermined by filth-poisoning, recent or chronic, and may so owe their destructiveness in part to this powerful morbid agency. These considerations indicate that the sum total of deaths attributable, directly or indirectly, to filth, is much greater than the yearly mortality occasioned by the manifest filth-diseases would make us suppose, *and we are led to conclude that the prevention of filth infection in its various forms constitutes, without any doubt, the greatest and most urgent sanitary need of Boston.*"

If this is true of a city beyond the forty-second parallel of north latitude, and whitened with frost eight months of every year, its waters and soil frozen as solidly as the granite of its buildings four months of the time, whose ponds furnish millions of tons of ice (nature's disinfectant), whose borders are washed with a current from polar seas, what then must we say of New Orleans, within six degrees of the *tropic of cancer*, its climate most inviting, in being mild and delightfully free from extremes of temperature, but semi-tropical, as shown in its annual range, with six months of summer heat and ten months of weather favorable to rapid fermentation, its borders touching the waters of the great cauldron from which pours the gulf stream, an atmosphere loaded with humidity—what then shall sanitary science say to our people? If the prevention of filth infection constitutes the greatest and most urgent sanitary need of Boston, its prevention in New Orleans presses itself with an urgency increased a hundred-fold. If she is compelled to devote her intellectual force, her time and money, to municipal sanitation, we are *driven* by many times the necessity to do the same.

"The attainment of this end imperatively calls for the adoption of energetic measures designed to prevent all possible contamination of our air, water and food, by the putrefying organic matters of all kinds which constitute 'filth.'

"Dirt has been defined by Sidney Smith as 'matter out of place.' So the filth of which we speak is but sewage out of place. When confined within its proper channels, and therein constantly undergoing rapid removal, sewage is harmless, and does not deserve the opprobrious epithet which it incurs under opposite conditions: namely, when stagnating without or even within its channels; then poisonous vapors are generated and given off, which convey filth-infection in all its forms.

"By no other means can the purification of our city from filth be encompassed than by the rapid and continuous removal

from our midst of all refuse matters, such as constitute sewage, comprising solid and liquid excrements, foul household waters, etc. *Any reliance upon 'disinfectants' as a means of public sanitation would be but a delusion and a snare.*"

As expressed by John Simon in his report to the Local Government Board of London, 1874 :

"In order to the prevention of filth diseases the prevention of filth is indispensable."

"Truism though this may seem, I think it needs to be expressly insisted on, as against any belief that districts allowed to become filthy can off hand be made wholesome by disinfectants. To chemically disinfect, in the true sense of that word, the filth of any neglected district, to follow the body and branchings of the filth with really effective chemical treatment, to thoroughly destroy or counteract it in muck-heaps and cess-pools, ash-pits, sewers and drains, and where soaking into wells and where exhaling into houses, cannot, I apprehend, be proposed as physically possible; nor can we expect to prevent or hold in check any filth disease through such agency."

Much of the so-called disinfection is really nothing better than hiding a fault, a poor excuse for negligence, often a mere satisfying of the mind by substituting one vile smell for another, without the trouble of removing the filth. The history of such methods is written in a single word—*disappointment!*

In a communication to the City Council on the privy system of Savannah, Dr. James J. Waring, alderman, makes the following quotation from the Journal of the Society of Arts, May 26th, 1876 :

"Dr. Henry Littlejohn, the Medical Officer of Health for Edinburgh, makes an interesting statement, which appears in a report upon the Lienur system, made to the corporation of the city of London by their engineer, Lieutenant-Colonel Haywood: 'Edinburgh consists of two distinct towns, an old and a new, but with very different populations. The new town is inhabited by the better classes, and is preëminently a water-closet town; whereas the old town consists for the most part of strongly built tenements, which, in the process of years, have undergone repeated subdivisions, until individual rooms, by means of partitions, are found to contain several families. It has been found impracticable to supply these tenants with ordinary water closet accommodations, and to this day they have to make use of pails for the reception of the excreta of those confined to the house. These pails are brought to the street daily, and emptied into carts provided by the authorities. From a return made to the corporation in 1874 I find that

41,613 houses were examined. Of these 27,294 had water closets, and 14,319 [population of about 70,000] had none. The latter mainly constitute the worst part of the old town of Edinburgh. From this state of things, the low morality of the population, the bad ventilation, the crowding together and the retention of the filth in the living rooms for the greater part of the day, it might naturally have been imagined that typhoid and diphtheria were endemic in the old town. This is not the case, however; for, despite the surrounding circumstances, these diseases may practically be said to be unknown. In the new and water-closeted town, however, the case is quite different. *Typhoid and diphtheria are never entirely absent, are frequently epidemic, and it has been noticed that the ravages of these diseases have been the greatest in the best houses.* The lesson which this teaches is that any system of removal cannot be sanitary, unless by it, in the words of Mr. Simon, all the excremental produce of a population is so promptly and so thoroughly removed that the inhabited place, in its air and soil, shall be absolutely without fecal impurities."

What we need is rapid and continuous translation of excreta from the privies to the middle of the Mississippi, below the city, where, lost in millions of tons of water, it is infinitely diluted, rendered instantly harmless, and swept away towards the gulf.

• Says Mr. Simon in his report: "The perfection of cleanliness would be, that all refuse matters should, from their very beginning, pass away inoffensively and continuously; and the principles of approximation to that ideal must evidently be to provide to the largest practicable extent for the continuous outflow of refuse as fast as produced. As the animal body, in its individual working, deals with the refuse of its own vital actions, so may that individual body, hindered in its respiration or other excretory acts, serve to picture the inevitable unhealthiness of any community, whether large or small, which lets its decaying refuse matters gather about it. We are guided by rules which present themselves as mere transcripts from nature."

There can be no effective sanitation for New Orleans that does not take into its account the complete abolition of the entire system of cesspools and privy vaults located in the soil. *Without this all else that may be done is but leaving the work undone.* To break ground for the purpose of constructing a sink must be deemed an injury to the public welfare, and made a misdemeanor.

To remedy the present system is beyond the reach of engi-

neering, inasmuch as no reliable system of underground sewerage could be applied. This fact, and our being obliged to have open gutters, are indeed fortunate. Sewers are themselves a source of constant danger, and sometimes terribly mischievous, are frequently out of repair, and are enormously expensive.

We present the following, from the report of Frederick Winsor, M.D., of Winchester, commissioned by the Massachusetts State Board of Health to make this special investigation :

“EXCREMENT REMOVAL.

“Of all forms of filth, the most dangerous, as well as the most offensive and most common, is fecal excrement. Cast off by the human economy, as not only incapable of furnishing any support, but utterly unfit to be longer retained in contact with the living body, it is nevertheless stored in the near neighborhood of most dwellings and of very many wells throughout the commonwealth. It lies beneath privies or in cesspools, which receive the wash from water-closets, dissolving and oozing more or less rapidly into the surrounding soil, from which it sometimes finds its way into some neighboring well, sometimes rises in gaseous form to poison the air, sometimes lies stored and lurking to infect any dwelling whose cellars may be dug into its ambush ground with ‘mysterious’ unwholesomeness.

“If any portion of that which finds its way into drinking water came from a person suffering with typhoid fever, cholera, dysentery, or with certain forms of intestinal worms, it sows the specific seeds of those diseases in many new victims, till they multiply themselves manifold. Investigations carried to the point of demonstration in England have shown that several severe and extensive epidemics of typhoid fever have originated in milk, brought from many miles away in the country and infected with water, into which a most minute amount of typhoid excreta had been washed from an adjacent and neglected privy. There is no means known of purifying excrement on a large scale, except by the roots of growing vegetation, and it does not become us to be positive that even this method can be depended on to disinfect that which carries the specific poison of cholera or of certain parasites.

“The only proper way to deal with excrement is to carry it as fast and as far away from human dwellings as possible ; and without doubt the best way to effect this is by a complete system of water carriage. But such a system must be thorough, or it will expose us to danger, even in our sleeping rooms. There are subtle, and to most persons unsuspected dangers, almost inseparable from any system of pipe sewerage.

“The great majority of dwellings cannot be furnished with water-closets, and must depend upon some form of privy. It therefore becomes a question of the greatest sanitary import-

ance what form is to be preferred. The things to be sought are (a) ease and inoffensiveness in removing the excrement; (b) security against its being absorbed by the material of the receptacle in which it is temporarily retained or by the adjacent soil; (c) security against offence; (d) economy."

In the second report of the Medical Officers of the Privy Council, England, 1874, is a paper by J. Netten Radcliffe on various ways of excrement removal in use in Great Britain, which supplies a deal of valuable practical information :

"In all of them it will be observed that the receptacles are small, made of impervious material, easily emptied or removed, and cheap. It is the practice to add to their contents the family coal ashes, either at every time of using or at short intervals. No 'slops' from bed room or kitchen are allowed to be thrown in. By the adoption of some one of these methods several large towns and cities in England and Scotland have rid themselves of most dangerous and disgusting nuisances in their most densely settled parts, substituting for them an arrangement at once more decent, cleanly, convenient and economical.

"The '*Rochedale pail-closet system*' has been in use since 1868, and was thoroughly inspected and approved by Mr. Radcliffe in 1869. In 1874 he again inspected it, and gave it his unqualified approval. It consists of a closet of strong and simple construction, beneath the seat of which is placed a 'pail,' made from half a kerosene barrel, capable of holding one hundred pounds; but in fact the average weight of its contents, after a week's use by an ordinary family, *proved to be forty-one pounds*. This is removed weekly, and an empty, disinfected pail substituted. In the case of very large families, or of workshops, two or more pails are used, or the removal is made twice or thrice a week. At the time of removal a tightly fitting metal lid is placed upon the pail. The process is quite inoffensive, and is systematically performed. The population of Rochedale in 1871 was 67,754; inhabited houses, 13,738, of which 2944 were fitted with pail closets, used by 11,770 persons. In 1874 the number of houses so fitted was 7287, used by 43,500 persons, when Mr. Radcliffe reported essentially as follows: That the system of removal had been thoroughly approved by all who had had experience of it; and that it had not failed under the most varied circumstances, having proved equally efficacious in the highly rented house with its own closet, in the lodging house where great numbers were accommodated, and in the factory and workshop.

"As to the working of the pail system: The movableness of the pails is their great recommendation; the facility which the system gives for frequent, thorough removal, being enormous. In this connection it is impossible not to be struck with the advantage that a pail system has in relation to diseased excre-

ments. The facility and thoroughness with which any required chemical disinfection can be done, and the way in which the excrement itself can be wholly got rid of, leaving none of its products behind, nothing soaking into the ground or hanging about privy vaults or sewers, obviously suggest most important powers possessed by this system for preventing the spread of excremental diseases.⁷

In Manchester the use of dry coal-ash as a deodorizer is combined with a pail-closet system much like that of Rochedale. The receptacle for excrement is of galvanized iron, fifteen inches high, eighteen inches in diameter, and of a capacity of ten gallons. These are removed weekly for most families, twice or thrice a week for very large ones, fortnightly for very small and neat ones. This system had not been in operation two years when inspected by Mr. Radcliffe, but it received his approval, though not quite so unreservedly as that of Rochedale. The addition of dry coal-ash is an improvement, but the metal pail is inferior to the wooden one. At the time of inspection the system had been applied to 6,000 of the 67,000 houses in Manchester, and was being extended at the rate of 5,000 annually.

The following is an extract from the twelfth report of the Medical Officer of the Privy Council of Great Britain for 1869:

"The pails used in Rochedale are made by the committee, who have undertaken the system from disused paraffine casks; each cask cut transversely in half forms two pails. Iron handles are attached to each pail, and the cost of each pail complete is 3s. 4d. The pails are changed for other pails belonging to the committee, and this is done weekly, except in the case of lodging houses or closets used by more than one family, when they are changed twice or thrice a week [or more than one pail is used]. Before the full pail is moved from the closet, it is covered by a lid, with India rubber packing attached to the flange.

Thus covered, it is placed in a close van for removal to the depot. We are satisfied from the statements made to us by householders, to whose residences pail closets are attached, that the removal of the filled pails gives rise to very little offence; even in those instances where the pails have to be carried through the house."

From the Journal of the Society of Arts, London, May 26th, 1876: "A committee was appointed to arrange for a trial of several methods proposed by which the night-soil should be removed. The methods decided to be tried were the Goux system, the ash or dry earth system, and the pail system. After

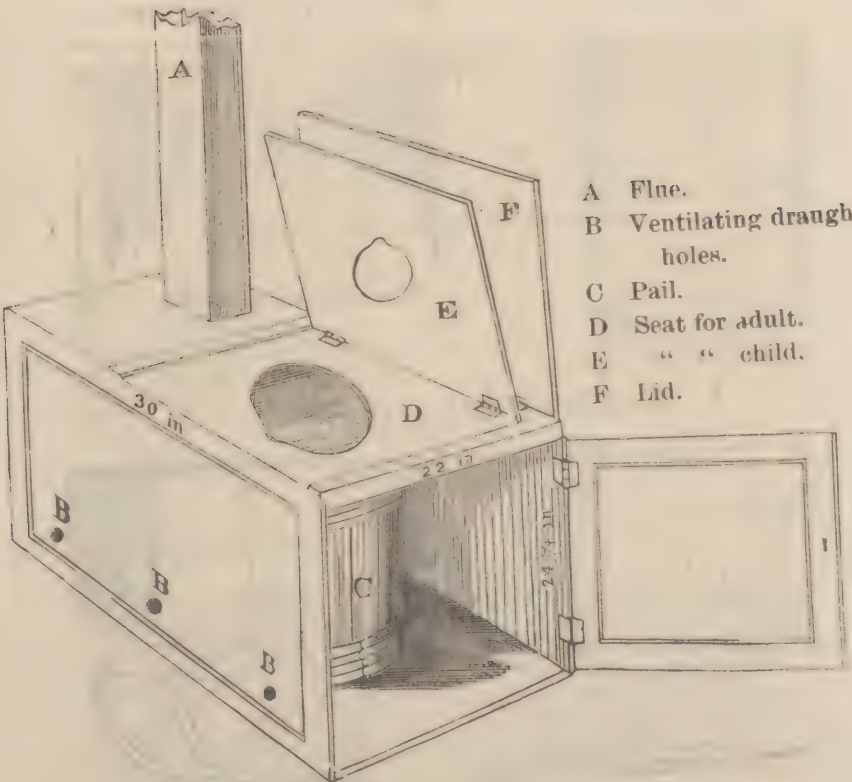
a nine months' full trial, the council, on the recommendation of the committee, decided that the pail now known as the 'Rochedale pail-system' was the best."

From annual report State Board of Health, Massachusetts, 1876:

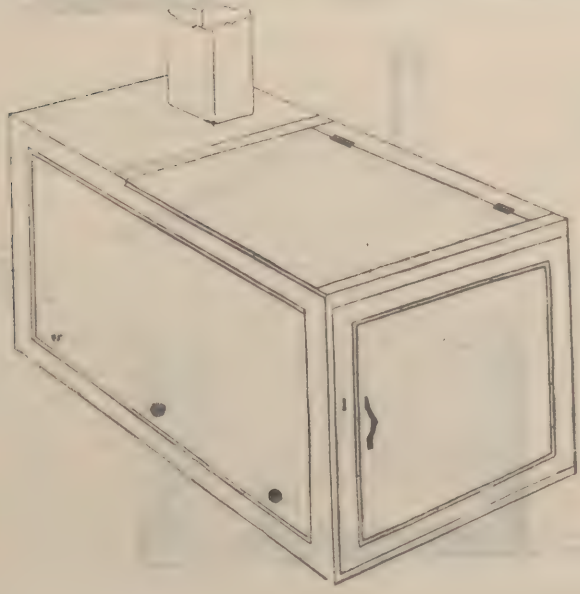
"There is no reason why any family should not at once substitute one of the preceding apparatus for its present privy. Such a change involves but little expense or trouble, and it would put the matter of the disposal of fecal excrement on a footing altogether satisfactory, whether from a sanitary or a social point of view. Every one admits that the methods now in almost universal use are anything but satisfactory; that most of them are offensive, often disgusting. The privy, as best constructed, pollutes the soil beneath more than is suspected. It is not cleared out one-tenth as often as is needed, and it exposes those who use it, to a dangerous extent. *For every form of privy which has any pit receptacle, from a hole in the ground to a vault bricked and cemented, the sanitarian can have nothing but reprobation.* Those that leak, as most do, pollute the ground: those that are tight, poison the air. The more they hold the worse they are, because the older such undiluted wet filth is, the more dangerously poisonous it is. It is amazing how blindly and recklessly this privy poisoning of the ground is persisted in in many places."

The contents of the privy vaults of New Orleans have a circuitous but sure access to the above ground cisterns; the poisonous gases directly contaminate the water in some instances of juxtaposition with disastrous effect. The solid matter reaches the cistern water by the simplest of routes: During wet weather the surface of the soil is contaminated by overflow, which occurs to a greater extent than the unobservant would suspect; during protracted dry weather this matter is taken up in clouds of dust, and lodged upon the house tops; the next rain washes it into the cistern. Myriads of low germs are so introduced into our drinking water. The degree of contamination cannot be compared of course to that of the privy poisoning of wells. However, it would be completely suppressed if we change the present system for the Rochedale method.

For the introduction of this system we present the following estimates of outfit and expenditure. We give first an estimate for a single carrying van, and another for a company employing six:



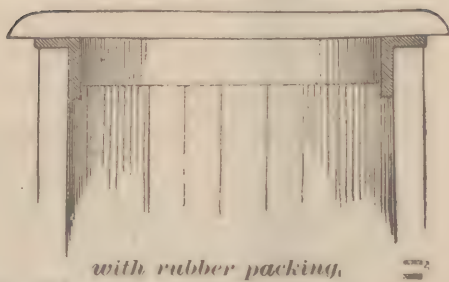
- A Flue.
- B Ventilating draught-
holes.
- C Pail.
- D Seat for adult.
- E " " child.
- F Lid.



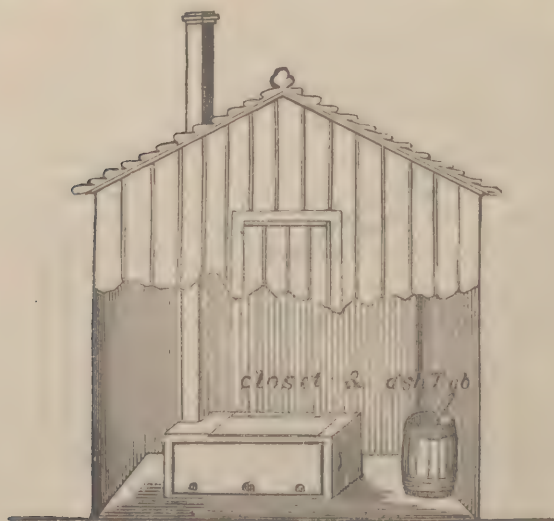
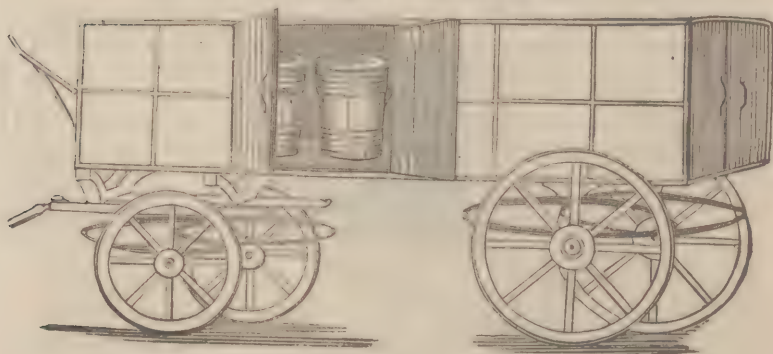
Closet Pail



Section of lid to closet Pail



NIGHT SOIL VAN



ORIGINAL COST.

1 wagon or van at \$200.....	\$200
2 mules at \$100 each.....	200
2 sets of harness at \$20 each.....	40
640 tubs or pails at \$1 25 each.....	800
	<hr/> \$1,240

RUNNING EXPENSES PER MONTH.

Stable rent.....	\$10
Office rent.....	25
Feed for stock.....	30
Wages of two laborers.....	78
Wear and tear, shoeing, etc.....	5
Disinfectants.....	1
Total.....	<hr/> \$149
Total for one year.....	1,788
Total.....	<hr/> \$3,028

INCOME

The van containing 16 pails, making three trips a day, could therefore attend to the emptying of 48 pails daily, or 1248 pails per month of 26 working days. Considering now that each pail would need to be emptied twice a month, the van therefore could attend to the emptying of 624 pails throughout the year. Charging an annual rate of \$5 per pail, or 20 cents for each removal, would then realize \$3120, paying the expenses and outlayed money, plus \$92 the first year and \$1332 every subsequent year.

ORIGINAL COST.

6 wagons or vans at \$200 each.....	\$1,200
12 mules at \$100 each.....	1,200
12 sets of harness at \$20 each.....	240
3840 tubs or pails at \$1 25 each.....	4,800
	<hr/> \$7,440

RUNNING EXPENSES PER MONTH.

Stable rent.....	\$25
Office rent.....	25
Clerk's salary.....	60
Feed for stock.....	180
Wages of 12 laborers.....	500
Wear and tear, shoeing, etc.....	30
Disinfectants.....	5
Total.....	<hr/> \$825
Total for one year.....	9,900
Total.....	<hr/> \$17,340

INCOME.

Six vans, containing each 16 pails, can make 3 trips each daily or attend to the emptying of 288 pails per day, or 7488 pails per month of 26 working days. Considering now that each pail would need to be emptied twice a month, the vans therefore could attend to the emptying of 3744 pails throughout the year. Charging an annual rate of \$5 per pail, or about 20 cents for each removal, would then realize \$18,720, paying the entire expenses and outlayed money, plus \$1380 the first year and \$8820 every subsequent year.

For the emptying from the residences at large, fifty carrying vans would be required, and ten additional vans for public institutions, manufactories, workshops, schools, etc., excluding the large hotels.

According to the English estimate, by the pail system is collected all of the solid excrement, and a little less than three-fifths of the fluid, for reasons readily accounted for in the habits of a large portion of the population. The accommodating capacity of the pails is proven to be much greater than was anticipated.

In the foregoing tables it is observed that the annual expenditure is in proportion much less for companies employing many carrying vans than for a single van. In either case they pay the original cost of outfit, all the running expenses, and declare a small dividend the first year. The third or fourth year they could well afford to reduce the rate to fifteen cents per pail for each removal, and yet declare a considerable profit.

Privy vaults cannot be well cleaned; even if emptied four times a year; they should by all means be emptied at least twice a year. At the present rate of charge, which is far less than it has ever been, the difference between the two systems in expense to householders is remarkable. The foul privy, cleansed once a year, and an insidious danger and an abomination all the time, actually costs more money than once, than cleansed every two weeks by the Rochdale system, and almost as much as by the latter cleansed weekly. If emptied twice a year it far exceeds in cost the latter system.

In effecting the change from the present to the new system, the requirements are exceedingly moderate, and such as lie

within the easy reach of any house-owner to accomplish within a reasonable time, say one year.

The vault must be cleaned and then filled with earth. The present seat is to be removed, flooring laid over the opening, and the seat, made a little higher and broader, is replaced or a new one constructed. A small door or hinged panel opens into this seat-closet, so as to permit the introduction and removal of a pail. If too high for convenience, a movable step is laid before the seat, to be drawn to one side when pails are exchanged and then replaced. The seat-closet must by all means be provided with a ventilating flue, which already exists in most privy structures.

This comprehends the whole work to be accomplished by landlords. The pails being the property of the companies are of no expense to property-holders. It is hardly a tithe of the expense required to construct a new vault, according to the specifications now in force, nor is it equal to the amount required to properly repair a vault.

It is a fact which urges itself for consideration, that fully two-thirds of the vaults throughout the entire city require to be rebuilt, not being constructed in conformity with law; and one-half the remaining third require extensive repairs. Our authorities already feel the necessity of taking this subject firmly in hand, and requiring of property-owners a change in this state of affairs. Every year the condition of these vaults, improperly constructed in the first place, is becoming more intolerable. But how shall a privy vault be constructed? for it is an unquestionable fact, confirmed by the experience of the best builders, that no vault built of bricks, mortar and cement, no matter how well constructed, can last in or upon the soil of New Orleans. In a very short time the mortar and cement are changed, destroyed by chemical action, the walls crack, and form innumerable fissures; its contents reach the soil. *We are obliged to make a change, or go on from bad to worse.*

To be accomplished, the Rochedale system can best be introduced by authority. Four months should be allowed, we will say, for the formation of companies, and twelve months more for the reconstruction of privies. It is of the utmost importance that each company should be encouraged to con-

centrate the field of its work, so as to avoid unnecessary travel in collecting pails. To facilitate discharge each district should be provided with a nuisance boat.

In the practical working of the Rochedale system, there are of course minute details, too voluminous for this report, which will only require a little experience to perfect. Utilizing the matter collected is a question for future consideration. In many European and English cities it more than pays the expenses of collecting.

Notwithstanding the immense weight of evidence furnished from abroad by those who have had experience of the several methods mentioned, only a small part of which has been herein adduced, it would be prudent, before attempting the general adoption of any particular system, to make trial of it on a sufficient but limited scale, first, in order to be assured, from personal observation, of its suitableness and general applicability; and, second, to become thoroughly acquainted with the details of construction and application.

In a matter vital to the health and comfort of the whole community, it rests as an obligation upon each individual to do willingly his part to promote the general welfare. By the general introduction of a new privy system, and the flushing of the street gutters, as already contemplated, New Orleans, from being a city of filth, would immediately become one of the most delightful homes on this continent.

Respectfully submitted.

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